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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/725,879	11/30/2000	Jang-hoon Yoo	1293.1156/MDS	9729

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EXAMINER

TRAN, THANG V

ART UNIT

PAPER NUMBER

2653

DATE MAILED: 10/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/725,879

Applicant(s)

YOO ET AL.

Examiner

Thang V. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-63 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-63 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 1-4, 6-17, 19-22, 24-26, 28, 29, and 38-63 are rejected under 35 U.S.C. 102(e) as being anticipated by Ueyanagi et al. (US 6,320,708).

Ueyanagi et al, according to Figs. 6(a)-8(b), 20(a) and 24, shows an objective lens (see Fig. 8(a) or 24 as example) comprising a first light transmitting portion (6a or 101a); a second transmitting portion (7a or 101b); a first reflecting portion (6b or 101c) formed around the second transmitting portion for reflecting the incident beam from the first transmitting portion; and a second reflecting portion (6e or 101d) formed around the first transmitting portion for reflecting the incident beam from the first reflecting portion toward the second transmitting portion, as recited in claim 1, 53, 60-63.

Regarding claim 2, see respective description related to beam spot (9) and aperture 7(a) in Figs 6(a) -8(b).

Regarding claims 3, 4 and 6-8, see film 11 or 103 in Fig. 8(a) and 24 respectively.

Regarding claims 9-13, see Fig. 8(a) and 24.

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Regarding claim 14, see the rejection applied to claim 1 above, and further see Fig. 20(a) which further shows the use of a light source (2); an optical path changing unit (13, 38, 4), an objective lens (6); and photo detector (15). Note: see the rejection applied above for the details of the objective lens recited in this claim.

Regarding claim 15, see the rejection applied to claim 2.

Regarding claims 16, 17 and 19, see film 11 or 103 in Fig. 8(a) and 24 respectively.

Regarding claim 20, see the angle of the reflected light beam in Fig. 8(a) and 24.

Regarding claims 21, 22, 24, 25, 26 and 28, see film 11 or 103 in Fig. 8(a) and 24 respectively.

Regarding claim 29, see Fig. 8(a) and 24.

Regarding claims 38-58, see respective disclosure of Figs. 8(a) and 24.

Regarding claim 59, see the rejection applied to claims 1 and 2 above.

3. Claims 32-34 are rejected under 35 U.S.C. 102(e) as being anticipated by either Ichimura (US 6,324,133) or Hineno (US 6,339,577).

Ichimura., according to Figs. 4-7, shows an optical apparatus (see Fig. 7 as example) comprising: a light source (16); an optical path changing unit (20, 23), an objective lens (14, 21); photo detector (26), and a detecting-correcting unit (27, 28) as recited in claims 32-34.

Hineno, according to Fig. 1, shows an optical device comprising: a light source (3); an optical path changing unit (4, 5), an objective lens (7); photo detector (9), and a detecting-correcting unit (6) as recited in claim 32 and 33.

4. Claims 36 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Mashita et al. (US 4,433,340).

Mashita et al., according to Fig. 9A, shows a recording medium comprising a an information substrate including an incident surface (28) for receiving light to record or reproduce information; a recoding surface (12) on which information is recorded, and wherein the thickness of from the incident surface to the recording surface is less than 0.1mm (see thickness of layer 28 in the range of 1 μ m to 10 mm), as recited in the instant claimed invention.

5. Claims 36 and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Kobayashi et al. (US 6,159,572).

Kobayashi et al., according to Fig. 1, shows a recording medium comprising a an information substrate including an incident surface (4) for receiving light to record or reproduce information; a recoding surface (3) on which information is recorded, and wherein the thickness of from the incident surface to the recording surface is less than 0.1mm (see thickness of layer 4 in the range of 0.0001 to 0.1 mm), as recited in the instant claimed invention.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 14, 20-31 and 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ichimura (US 6,324,133) or Hineno (US 6,339,577) in view of Chen et al. (US 6,377,535).

Ichimura., according to Figs. 4-7, shows an optical apparatus (see Fig. 7 as example) comprising: a light source (16); an optical path changing unit (20, 23), an objective lens (14, 21); photo detector (26), and a detecting-correcting unit (27, 28), and Hineno, according to Fig.

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1, shows an optical device comprising: a light source (3); an optical path changing unit (4, 5), an objective lens (7); photo detector (9), and a detecting-correcting unit (6). However, neither Ichimara nor Hineno teach the use of an objective lens comprising a first light transmitting portion, a second transmitting portion, a first reflecting portion, formed around the second transmitting portion for reflecting the incident beam from the first transmitting portion, and a second reflecting portion formed around the first transmitting portion for reflecting the incident beam from the first reflecting portion toward the second transmitting portion. Chen et al., according to Figs. 6-15, teaches the use of the above objective lens (see Figs. 6-13). It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the objective lens in the apparatus of either Ichimara or Hineno with the objective lens as taught by Chen et al. in order to reduce a spot size for high density recording and reproducing operation. For limitations in claims 20-29, see Figs. 6-13 of Chen et al. For limitations in claim 30, see Fig. 1 of Hineno or Fig. 7 of Ichimura. For limitations in claim 31, see Fig. 7 of Ichimura.

8. Claims 4-6, 8-10, 17-19, 22-24, and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueyanagi et al. in view of Chen et al. (US 6,377,535) if applicant disagrees with examiner's interpretation for the path different generating portion in the rejection above.

Ueyanagi et al, according to Figs. 6(a)-8(b), 20(a) and 24, shows all the features of the instant claimed invention (see the rejection above) except for the use of a path different generating portion. Chen et al., according to Fig. 6, teach the use of the objective including a path different generating portion provided therein. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the objective lens of

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Ueyanagi et al by providing a path different generating portion therein based on the teaching of Chens et al. in order to increase the NA of the objective lens.

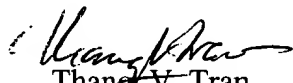
Cited References

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited reference relates to an optical apparatus having an objective lens including reflecting portions therein.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thang V. Tran whose telephone number is (703) 308-1551. The examiner can normally be reached on Tuesday to Friday, from 7:30AM to 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (703) 305-6137. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.


Thang V. Tran
Primary Examiner
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